

I CLAIM:

1. A footwear article conveyer adapted for use with a plurality of carriers so as to carry footwear articles through a series of work stations, said
5 conveyer comprising:

an article-conveying line adapted to extend through the work stations, adapted to receive the carriers thereon and to permit sliding movement of the carriers thereon, and having an article-loading
10 end and an article-unloading end;

a first driving unit adapted to drive the carriers to move simultaneously along said article-conveying line;

a carrier-returning line separate from said
15 article-conveying line and having a carrier-loading end and a carrier-unloading end;

a first shifting unit adapted to shift one of the carriers, which is disposed at said article-unloading end of said article-conveying line, from said
20 article-conveying line to said carrier-loading end of said carrier-returning line;

a second driving unit adapted to drive said one of the carriers to move along said carrier-returning line from said carrier-loading end to said
25 carrier-unloading end;

a second shifting unit adapted to shift said one of the carriers from said carrier-unloading end of

said carrier-returning line to said article-loading end of said article-conveying line; and

a controller that is coupled electrically to said first and second driving units and said first and second shifting units for controlling the movement of the carriers on said article-conveying line and said carrier-returning line in such a manner that each of the carriers on said article-conveying line has a first duration time, which is the time required for moving from said article-loading end to said article-unloading end, and that each of the carriers on said carrier-returning line has a second duration time, which is the time required for moving from said carrier-loading end to said carrier-unloading end and which is shorter than said first duration time.

2. The footwear article conveyor of Claim 1, wherein said article-conveying line includes a pair of parallel first sliding rails adapted to permit sliding movement of the carriers thereon.

3. The footwear article conveyor of Claim 2, wherein said carrier-returning line includes a pair of parallel second sliding rails adapted to permit sliding movement of said one of the carriers thereon, and disposed above said first sliding rails.

4. The footwear article conveyor of Claim 3, wherein said first driving unit includes a pair of first driving rollers that are respectively disposed adjacent to said

article-loading end and said article-unloading end of said article-conveying line, and a chain that is trained on said first driving rollers and that is adapted to engage releasably each of the carriers so as to drive the carriers to slide on said first sliding rails.

5 5. The footwear article conveyer of Claim 4, wherein said second driving unit includes a pair of second driving rollers that are respectively disposed adjacent to said carrier-loading end and said carrier-unloading end of said carrier-returning line, and a belt that is trained on said second driving rollers and that has a toothed outer surface which is adapted to engage frictionally said one of the carriers so as to drive said one of the carriers to slide on said second sliding rails.

10 6. The footwear article conveyer of Claim 5, wherein said first shifting unit includes a first vertical support, a first stage mounted movably on said first vertical support, and a first hydraulic cylinder connected to said first stage so as to move hydraulically said first stage between a first lower position, in which said first stage is disposed at a first level corresponding to said article-unloading end of said article-conveying line, thereby permitting horizontal shifting of said one of the carriers to said first stage, and a first upper position, in which said first stage is disposed at a second level corresponding to said carrier-loading

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end of said carrier-returning line, thereby permitting horizontal shifting of said one of the carriers to said carrier-loading end of said carrier-returning line.

5 7. The footwear article conveyer of Claim 6, wherein said first shifting unit further includes a horizontal hydraulic cylinder that is connected to said first hydraulic cylinder so as to be movable therewith, and that is operable to move said one of
10 the carriers from said first stage to said carrier-loading end of said carrier-returning line.

8. The footwear article conveyer of Claim 7, wherein said carrier-returning line has a horizontal section extending from said carrier-loading end of said
15 carrier returning line, and an inclined section extending inclinedly and downwardly from said horizontal section to said carrier-unloading end of said carrier-returning line, said carrier-returning line further including a stopper that is mounted
20 movably on said carrier-unloading end of said carrier-returning line and that is operable to control time of shifting of said one of the carriers from said carrier-unloading end of said carrier-returning line to said article-loading end of said
25 article-conveying line.

9. The footwear article conveyer of Claim 8, wherein said second shifting unit includes a second vertical

support, a second stage mounted slidably on said second vertical support, and a second hydraulic cylinder connected to said second stage so as to move hydraulically said second stage between a second upper position, in which said second stage is disposed at a third level corresponding to said carrier-unloading end of said carrier-returning line, thereby permitting horizontal shifting of said one of the carriers to said second stage, and a second lower position, in which said second stage is disposed at a fourth level corresponding to said article-loading end of said article-conveying line, thereby permitting horizontal shifting of said one of the carriers to said article-loading end of said article-conveying line.